

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT (PCT Article 36 and Rule 70)



Applicant's or agent's file reference 1801wo-ag	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/FI 03/00460	International filing date (day/month/year) 10.06.2003	Priority date (day/month/year) 12.06.2002
International Patent Classification (IPC) or both national classification and IPC G05B19/40		
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- This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 6 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

 These annexes consist of a total of 2 sheets.

- This report contains indications relating to the following items:
 - I ☒ Basis of the opinion
 - II ☐ Priority
 - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV ☐ Lack of unity of invention
 - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI ☐ Certain documents cited
 - VII ☐ Certain defects in the international application
 - VIII ☐ Certain observations on the international application

Date of submission of the demand 09.01.2004	Date of completion of this report 17.08.2004
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EXAMINATION REPORT**

International application No. PCT/FI 03/00460

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-5 as originally filed

Claims, Numbers

1-7 received on 04.05.2004 with letter of 04.05.2004

Drawings, Sheets

1/2-2/2 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-7
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	1-7
Industrial applicability (IA)	Yes: Claims	1-7
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Reference is made to the documents of the International Search Report:

D1: WO 87/02151
D2: EP-A-0 762 251
D3: EP-A-0 494 433
D4: US-A-2002/0033885
D5: US-A-5 806 390
D6: DE-A-195 44 366

2. D1, which is considered as the document comprising the closest prior art, discloses a method of determining the cutting path of the contour of a plane object in order to trim hides or similar pieces of soft material. The desired cutting path is calculated by taking into account the cutting parameters (see D1: page 1, line 32 to page 2, line 3; and page 6, line 26 to page 7, line 7), after a video image is taken by a video(-CCD) camera means, converted to digital codes and subsequently processed by a computer (8, 10); the final contour is fed to the cutting means (22 with reference to figures 1 and 2) proceeding thus to the requested cut (cf. page 9, lines 24-29 and page 13, lines 20-26).

Consequently D1 does not disclose the following features defined by Claim 1:

- (a) cutting a **metal sheet** piece;
- (b) using a **photographic** camera means for obtaining the contour;
- (c) **positioning the smaller piece(s) to be cut** on the metal sheet.

3. Features (a) and (b) above are however disclosed by D4 and can be possibly combined with the method known by D1 without having recourse to an invention. More specifically D4 discloses a **metal sheet** to be cut from a metal blank sheet (20 in figure 1; see Abstract; paragraphs 2 and 26 of the description), the contour of which is taken by using **photographic** cameras and photogrammetry (cf. page 2, paragraphs 33-36 and 47-52).

Feature (c) is well known in the art, since positioning the smaller piece(s) to be cut from

a larger original sheet material in function of the outlines of this latter is routinely carried out either by an operator or automatically by a computer. Examples are given in:

- D2 (cf. column 1, lines 46-57 and column 3, lines 14-39), in which is provided the possibility of repositioning one or more of the segment patterns in the marker to optimise the segment position on the piece (see figures 1, 4, 7, 8);
- D3 (cf. small pieces K_1, K_2, \dots, K_i in figure 2; column 4, lines 5 to 10; column 7, line 41 to column 8, line 31); and
- D5 (cf. Abstract and figure 3).

Consequently, the subject matter of Claim 1, referring to the mere application of the known sheet cutting techniques in cutting a **metal** piece is obvious to the person skilled in the art once the problem is set and does not therefore involve an inventive step (article 33(3) PCT).

4. Dependent Claims 2 to 7 do not appear to contain any additional features which, in combination with the features of any claim to which they refer, would involve an inventive step. These features are comprised in the disclosures of the above cited documents for the same purpose and in a similar field, or they concern measures of normal design procedure, being thus obvious to the skilled person (article 33(3) PCT).

5. More specifically, the attention of the applicants is drawn to the following points:

(a) The subject-matter of Claims 2 to 4, referring to the automatic determination of the starting point of the cutting and positioning on the sheet of the cutting paths, as well as to their optimisation and the one of the material used are known in the art (see e.g. D1 at page 14, line 28 to page 15, line 23).

(b) The changes of the cutting procedure from an incremental to an absolute coordinate system is carried out by the skilled person according to the circumstances during the exercise of his normal tasks.

(c) The use of the various cutting apparatus set out in Claim 5 is well-known in the art and thus open to the person skilled in the art; reference is made e.g. to D6 (cf. column 1, lines 12-15).

(d) Referring to the additional subject-matter of Claim 6, it is noted that the use of ancillary photographic equipment, such as a light source or a laser bar, in order to obtain the required information (e.g. contrast), is also known in the art. Examples are given by D3 (cf. column 3, lines 45-49), by the use of a (flash) light at everyday

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photographing in poor light conditions and by D4 (cf. page 4, paragraph 75).

(d) Referring to the additional subject-matter of Claim 7, it is noted that D4 discloses a metal sheet to be cut in order to form a part of a metal structure, as e.g. of a car (cf. column 1, paragraph 2).

6. The application and its claims are all directed to cutting a sheet-like piece of metal into one or several smaller pieces. Consequently, the subject-matter of all claims is industrially applicable (Article 33(4) PCT).

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